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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,042	11/07/2001	Wei-Yu Su	TS01-132	1835

8933 7590 10/03/2006

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EXAMINER
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EL ARINI, ZEINAB

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 10/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/040,042	<b>Applicant(s)</b> SU, WEI-YU	
	<b>Examiner</b> Zeinab E. EL-Arini	<b>Art Unit</b> 1746	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,7,8,10,11 and 14-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,7,8,10,11 and 14-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

The amendment and remarks filed 7/25/06 have been acknowledged and entered.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-4, 7-8, 10-11, and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagamura et al. (6,071,376).

Re claims 1, 4, 7-8, 11, 14-17, Nagamura et al. disclose a method and apparatus for cleaning a photomask to be used in the photolithography step in the process for the production of semiconductor integrated circuit device. The reference discloses treating the photomask by contacting with a solution comprising ammonium hydroxide, hydrogen peroxide and water, agitating the solution by using ultrasonic, and the multiple number of cleaning cycles, and the photomasks (claims 1, 7), the temperature (claims 4, 11), The pH, and the limitation of claims 8, 14-17. See col. 1, lines 13-20, lines 28-33, 49-55, col. 2, lines 22-33, 40-62, col. 4, lines 17-48, col. 8, lines 28-35, col. 9, lines 1-51, Figs. 5-6, and the document in general. Removing particles and residues greater than about 0.2 microns is inherent in Nagamura et al. process. The limitation of claims 3 and 10 is inherent in the Nagamura et al. process. Re claims 1, 7, Nagamura

et al. as discussed supra do not teach the ratio, the number of cleaning cycles, and the pH as claimed.

It would have been obvious for one skilled in the art to adjust the ratio and number of cleaning cycles in Nagamura et al. process to obtain optimum results. The number of cleaning cycles depends on the amount of the particles and the residues on the photomasks (see col. 2, lines 40-50). The concentration of the cleaning solution is determined by the contamination of the photomasks. It would have been obvious for one skilled in the art to adjust the pH of the cleaning solution to obtain optimum results.

### ***Response to Arguments***

3. Applicant's arguments filed 7/25/06 have been fully considered but they are not persuasive. Applicant's argument with respect to the ratio, the pH, and the number of multiple cleaning cycles is unpersuasive, because one skilled in the art would adjust the concentration ratio, the pH, and the number of cleaning cycles to obtain optimum results (see Nagamura et al, col. 2, lines 40-50). Applicant's argument with respect to the reference does not teach the etching as claimed is unpersuasive, because it is inherent properties of the cleaning solution as taught by the cited art. This is also because the solution containing ammonium hydroxide, hydrogen peroxide, and water, is capable of performing the etching step as claimed.

### ***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zeinab E. EL-Arini whose telephone number is (571) 272-1301. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1746

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*Zeinab E. EL-Arini*  
Zeinab E. EL-Arini  
Primary Examiner  
Art Unit 1746

ZEE  
9/26/06